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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,218	07/22/2003	Sampath Hosahally Kumar	2705-277	8363
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MARGER JOHNSON & MCCOLLOM, P.C. 210 SW MORRISON STREET, SUITE 400 PORTLAND, OR 97204				
			EXAMINER AUVE, GLENN ALLEN	
			ART UNIT	PAPER NUMBER
			2111	

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/625,218

Applicant(s)

KUMAR, SAMPATH HOSAHALLY

Examiner

Glenn A. Auve

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26,28,30,32 and 33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 8-26,30,32 and 33 is/are allowed.  
6) ☒ Claim(s) 1-6 and 28 is/are rejected.  
7) ☒ Claim(s) 7 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Swanstrom, U.S. Pat. No. 5,822,568 (previously applied).

As per claim 1, Swanstrom shows a method of processing interrupts, the method comprising detecting an indicator of an interrupt signal from an expansion device residing on an expansion bus, wherein the detecting occurs at a local device on a local bus (fig.7, (760 and 710) and col.8, wherein interrupts are passed via "local bus" 712 from the PIC 760 to the CPU 710); transferring data related to the interrupt signal from the device across the expansion bus to a local memory (col.8, lines 40-57); and processing the data related to the interrupt signal (inherent in that after the data has been transferred to the local memory it is available for any sort of "processing"). Swanstrom shows all of the steps recited in claim 1.

As for claim 2, the argument for claim 1. Swanstrom also shows detecting an indicator of an interrupt further comprising receiving an interrupt at a central processor (col.8, lines 15-32). Swanstrom shows all of the steps recited in claim 2.

As for claim 3, the argument for claim 1. Swanstrom also shows detecting an indicator of an interrupt further comprising receiving an interrupt on an interrupt line to a direct memory access controller (fig.7 and col.8). Swanstrom shows all of the steps recited in claim 3.

As for claim 4, the argument for claim 1. Swanstrom also shows detecting an indicator of an interrupt further comprising using a direct memory access controller to detect a voltage

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change on an interrupt line (inherent in the detection of signals in digital logic circuitry).

Swanstrom shows all of the steps recited in claim 4.

As for claim 5, the argument for claim 1. Swanstrom also shows transferring data further comprising using a direct memory access controller to transfer data from any expansion devices that generated interrupt signals (cols. 8 and 9). Swanstrom shows all of the steps recited in claim 5.

As for claim 6, the argument for claim 1. Swanstrom also shows transferring data further comprising using a direct memory access controller to transfer data from expansion device to local memory and generating an interrupt to a central processor (col.10, lines 26-42).

Swanstrom shows all of the steps recited in claim 6.

As per claim 28, Swanstrom shows a device comprising means for detecting an indicator of an interrupt signal from an expansion device residing on an expansion bus at a device on a local bus (fig.7, (760 and 710) and col.8, wherein interrupts are passed via "local bus" 712 from the PIC 760 to the CPU 710); means for transferring data related to the interrupt signal from the device to a local memory on the local bus (col.8, lines 40-57); and means for processing the data related to the interrupt (inherent in that after the data has been transferred to the local memory it is available for any sort of "processing"). Swanstrom shows all of the elements recited in claim 28.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-6 and 28 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments regarding the rejections based on the Williams reference are persuasive in light of the amendment to the claims. The amendments to claims 8,16,19, 30, and 33, have overcome the rejections based on the Swanstrom reference.

However the Swanstrom reference applies to claims 1-6 and 28, as amended, as has been indicated above. In regards to the arguments made on page 10 with respect to the Swanstrom reference, applicant argues that Swanstrom does not teach that the interrupt detection and handling are performed local to the central processor. However, it is noted that in certain modes of operation the CPU does in fact detect an indicator of an interrupt signal from an external device as noted above. The rejected claims do not require that interrupt handling is performed local to the processor. However even if this limitation were present there is a certain amount of "handling" of the interrupts performed by the processor as indicated at least in column 8.

#### ***Allowable Subject Matter***

4. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 8-26,30,32, and 33 are allowed.

6. The following is an examiner's statement of reasons for allowance: Claims 8,16,19,22,30,32, and 33 each include the limitation that the DMA controller is local to the processor. This limitation is not shown by Swanstrom and it would not have been obvious to modify Swanstrom in order to place the DMA controller local to the processor.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the

issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The newly cited references show interrupt and DMA request handling.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn A. Auve whose telephone number is (571) 272-3623. The examiner can normally be reached on M-F 8:00 AM-5:30 PM, every other Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571) 272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn A. Auve  
Primary Examiner  
Art Unit 2111

gaa  
30 January 2006